

Preliminary Amendment
Attorney Docket No. 011002
Serial No. 09/923,543

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A link tree forming apparatus for setting individually selectable links for a plurality of objects displayed on a screen to form an overall object link tree, said apparatus comprising:

position information acquiring unit acquiring position information for each object; and

link setting unit setting, on the basis of said acquired position information, a link between an m-th object and an n-th object when only said n-th object exists in a predetermined direction with reference to said m-th object, said link setting unit alternatively setting a link based on a distance of each object from said m-th object in said predetermined direction when a plurality of objects exist in said predetermined direction with reference to said m-th object; and

converting unit converting, when a plurality of distances from said m-th object to said n-th object are defined, the position and size of said n-th object into those of a substitute object, by using as parameters at least one of the positions, sizes and directions of said n-th object at the shortest distance and at the longest distance among said plurality of distances,

wherein said position information acquiring unit acquires numeric values converted by said converting unit.

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Claim 2 (Previously presented): The link tree forming apparatus according to claim 1, wherein said link setting unit sets a link to the object at the shortest distance from said m-th object out of said plurality of objects existing in said predetermined direction.

Claim 3 (Original): The link tree forming apparatus according to claim 1, wherein said distance includes at least one of a screen horizontal-direction distance, a screen vertical-direction distance, and a distance based on both a screen horizontal direction and a vertical direction.

Claim 4 (Previously presented): The link tree forming apparatus according to claim 1, wherein said link setting unit comprises:

first setting unit setting a link to an object that exists in a first direction satisfying a first condition from among said plurality of predetermined directions for each object; and

second setting unit setting a link to an object that exists in a second direction for which no link has been set by said first setting unit from among said plurality of predetermined directions, said second direction satisfying a second condition.

Claim 5 (Previously presented): The link tree forming apparatus according to claim 4, wherein said link setting unit comprises:

third setting unit setting a link to an object that exists in a third direction opposite to one of said first and second directions set by said first setting unit and said second setting unit, said third direction satisfying a third condition; and

fourth setting unit setting a link to an object that exists in a fourth direction, opposite to the other of said first and second directions set by said first setting unit and said second setting

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unit, for which no link has been set by said third setting unit, said fourth direction satisfying a fourth condition.

Claim 6 (Canceled).

Claim 7 (Original): The link tree forming apparatus according to claim 1, wherein said objects are of a variety of types including contents or frames including Hyperlinks and objects to be displayed by a Web browser.

Claim 8 (Previously presented): The link tree forming apparatus according to claim 7, further comprising:

determining unit determining the types of said objects;

detecting unit, when an object is detected to be a frame by said determining unit, further detecting selectable objects other than a frame within said detected frame; and

inter-frame link setting unit, when an object other than a frame within said detected frame is detected by said detecting unit, setting a link to said detected object within said detected frame from another frame.

Claim 9 (Previously presented): The link tree forming apparatus according to claim 8, wherein with regard to settings by said inter-frame link setting unit, a link between objects is set only when a link destination object exists at a position that is visible on the screen, and such a link setting is variable according to a frame scroll state.

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Claim 10 (Previously presented): The link tree forming apparatus according to claim 1, wherein said link setting unit sets a link for performing focus movement on the basis of an input by unit of a cross-shaped button.

Claim 11 (Currently Amended): A link tree forming method for setting individually selectable links for a plurality of objects displayed on a screen to form an overall object link tree, said method comprising:

first processing for setting a link between an m-th object and an n-th object when only said n-th object exists in a predetermined direction with reference to said m-th object; and

second processing for setting a link based on a distance of each object existing in a predetermined direction from said m-th object when a plurality of objects exist in said predetermined direction with reference to said m-th object; and

a converting step of, when a plurality of distances from said m-th object to said n-th object are defined, converting the position and size of said n-th object into those of a substitute object, by using as parameters at least one of positions, sizes and directions of said n-th object at the shortest distance and at the longest distance among said plurality of distances,

wherein said first processing and said second processing are executed on the basis of numeric values converted in said converting step.

Claim 12 (Original): The link tree forming method according to claim 11, wherein said second processing comprises:

a first step of setting a link to an object that exists in a first direction satisfying a first condition from among a plurality of predetermined directions for each object; and

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a second step of setting a link to an object that exists in a second direction for which no link has been set in said first step from among said plurality of predetermined directions, said second direction satisfying a second condition.

Claim 13 (Original): The link tree forming method according to claim 12, wherein said second processing comprises:

a third step of setting a link to an object that exists in a third direction opposite to one of said first and second directions set in said first step and said second step, said third direction satisfying a third condition; and

a fourth step of setting a link to an object that exists in a fourth direction, opposite to the other of said first and second directions set in said first step and said second step, for which no link has been set in said third step, said fourth direction satisfying a fourth condition.

Claim 14 (Canceled).

Claim 15 (Original): The link tree forming method according to claim 11, wherein, when setting a link to an object existing within a frame from another frame, a link to that object is set only when that object exists at a position that is visible on the screen, and such a link setting is variable according to a frame scroll state.

Claim 16 (Currently Amended): A link tree forming program for setting individually selectable links for a plurality of objects displayed on a screen to form an overall object link tree, said program adapted to execute on a computer:

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first processing for setting a link between an m-th object and an n-th object when only said n-th object exists in a predetermined direction with reference to said m-th object; and

second processing for setting a link based on a distance of each object existing in a predetermined direction from said m-th object when a plurality of objects exist in said predetermined direction with reference to said m-th object; and

a converting step of, when a plurality of distances from said m-th object to said n-th object are defined, converting the position and size of said n-th object into those of a substitute object, by using as parameters at least one of positions, sizes and directions of said n-th object at the shortest distance and at the longest distance among said plurality of distances,

wherein said first processing and said second processing are executed on the basis of numeric values converted in said converting step.

Claim 17 (Original): The link tree forming program according to claim 16, wherein said second processing make said computer to execute:

a first step of setting a link to an object that exists in a first direction satisfying a first condition from among a plurality of predetermined directions for each object; and

a second step of setting a link to an object that exists in a second direction for which no link has been set in said first step from among said plurality of predetermined directions, said second direction satisfying a second condition.

Claim 18 (Currently Amended): A computer-readable recording medium having a link tree forming program recorded thereon, said program adapted to execute on a computer, when

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setting individually selectable links for a plurality of objects displayed on a screen to form an overall object link tree,

first processing for setting a link between an m-th object and an n-th object when only said n-th object exists in a predetermined direction with reference to said m-th object, ~~and~~

second processing for setting a link based on a distance of each object existing in a predetermined direction from said m-th object when a plurality of objects exist in said predetermined direction with reference to said m-th object; and

a converting step of, when a plurality of distances from said m-th object to said n-th object are defined, converting the position and size of said n-th object into those of a substitute object, by using as parameters at least one of positions, sizes and directions of said n-th object at the shortest distance and at the longest distance among said plurality of distances,

wherein said first processing and said second processing are executed on the basis of numeric values converted in said converting step.